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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

ART UNIT	PAPER NUMBER
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DATE MAILED:

GREG ~~LEH~~ EINHORN ^{for}
858 - 678 - 5070
CA

Please find below and/or attached an Office communication concerning this application or proceeding.

430

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO. KM
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EXAMINER

ART UNIT	PAPER NUMBER 4
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Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/493,401

Applicant(s)

MARCOTTE ET AL

Examiner

Shubo "Joe" Zhou

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) ____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 18) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other

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DETAILED ACTION

The art unit designated for this application has changed. Applicant(s) are hereby informed that future correspondence should be directed to Art Unit 1631.

Specification

The specification is objected to because the Brief Description of the Drawing refers to Fig. 8 but no Fig. 8 rather Fig. 8a, Fig. 8b and Fig. 8c are provided as originally filed on 1/28/00.

The disclosure contains embedded hyperlink and/or other form or browser-executable code. Such code is present in the specification at page 2 and elsewhere. Applicants are required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP, 608.01.

Appropriate correction is required.

Claim Rejections-35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite, for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "sequence of multiple distinct non-homologous polypeptides" of claim 1 and its dependent claim 2 is vague and confusing since it is not clear which

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particular "sequence" of the multiple "polypeptides" is used in the alignment step. Note that a singular form of sequence is used by the applicants.

Claim Rejections-35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaasterland et al. (Microb. Comp. Genomics 1998; 3(3): 177-92) in view of Dandekar et al. (Trends Biochem. Sci. 1998, 23: 324-328).

Gaasterland et al. teach of methods for constructing multigenome views of whole genomes including determining functional links between polypeptides. Gaasterland et

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al. obtain genomic sequence data from at least two genomes *including Haemophilus influenzae* and *E. coli*, (see page 178); compare a plurality of amino acid sequences translated from ORFs of one genome, which amino acid sequences are interpreted the same as the polypeptide sequences in the instant invention, with a plurality of amino acid sequences from other genomes to form multiple sequence alignments and the corresponding neighbor-joining trees, which trees is interpreted as having the same meaning as the "phylogenetic profile" required in the instant invention (see pages 178-179 and 189); group the amino acid sequences into functional categories and match families (see page 182). Gaasterland et al. also align a primary amino acid sequence of an ORF with unassigned function to the primary sequences of a plurality of amino acid sequences and output any alignments as one of several confidence levels (see page 179) as an indication of the functional link between the multiple sequences.

Furthermore, Gaasterland et al. place the ORFs encoding the amino acid sequences analyzed in diagrams/Tables such that functionally linked proteins are closer together and identify ORFs that fall in a group (see Tables 4 and 6).

Although Gaasterland et al. do not explicitly teach of comparing the functional links identified above to the functional links identified by patterns of correlated expression, experimentally measured interactions, and functional relationships as required in the instant invention, they do motivate studies of comparing the result of sequence similarities with cellular functions, which cellular functions is broadly interpreted as including expression, protein interaction, etc. (see the bridging paragraph of pages 189 and 190).

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Dandekar et al. teach of predicting the function of a protein with unknown function. Dandekar et al. compare multiple genomes; generate phylogenetic trees or clusters for the nine genomes analyzed (see page 325 and Fig.1); predict the interaction of protein pairs and compare the predicted interaction with experimental data using a ribosome-associated protein as an example (see page 325, Box 2 on page 326 and the right column of page 327).

Thus, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use the teachings and/or motivations of Gaasterland et al. and Dandekar et al. to practice the instant methods for determining functional links between polypeptides.

Conclusion

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703)305-3014.

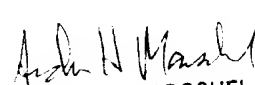
Any inquiry concerning this communication or earlier communications from the examiner should be directed to:
Shubo "Joe" Zhou, Ph.D., whose telephone number is (703) 605-1158. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703) 308-4028.

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Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst Tina Plunkett whose telephone number is (703)-305-3524, or to the Technical Center receptionist whose telephone number is (703) 308-0196.

S. "Joe" Zhou: sjz
Patent Examiner
February 6, 2001


ARDIN H. MARSCHEL
PRIMARY EXAMINER